direction; so that it has the pressure of the stream behind it and the pressure of the resistance of the blood in front of it, which determine the biconcave form of the perfect red blood-corpuscles. The nucleus left behind accounts for the free nuclei which may be found in red marrow.

When fresh blood-corpuscles are required to make up for the loss of blood by accident or disease, the blood-pressure, increased by certain influences towards the medullary cavity, necessitates the exit of an extra supply from that cavity as fast as its entrance therein, since the blood is passing through unyielding structures. Red corpuscles are more rapidly formed. Rapid fission of the hæmatoblasts taking place, the corpuscles, under these circumstances, are smaller than normal. After bleeding a guinea-pig, its blood was examined on the third day, and numerous small red corpuscles were found side by side with those of natural dimensions. The number of these small bodies increased till the seventh day, then they diminished; so that, about the fourth week after the bleeding, not one single small corpuscle was to be found. In the blood of women after menorrhagia, similar bodies were detected, ultimately disappearing; and neither in this nor any other form of hemorrhage could an increase of white corpuscles be discerned. The deduction thus suggested by Professor Rindfleisch is obvious.

That in animals where the red blood-corpuscles are permanently nucleated, these, too, are developed from hæmatoblasts, there can be no doubt. Besides, from examining sections of the spleen of a young dove, proofs have been found of the origin of hæmatoblasts from white blood-corpuscles or leucocytes. The spleen is the chief blood-forming organ in birds; in mammals it plays a great part, being a store of hæmatogenous tissue supplemental to the blood-forming red marrow. Why the cells of the marrow have this tendency to form corpuscles is a question unsolved, but which does not refute Rindfleisch's theory. What has the marrow (says he) in common with the spleen or the blastoderm? Yet the two latter, quite different structures, have long been admitted to aid in the formation of blood. After extirpation of the spleen, vicarious sanguification has been found to be established in the mesenteric glands. In an anæmic child, rachitic and with general sclerosis of the cancellous tissue of the bones—which, of course, implied great changes in the red marrow—the greater part of the lymphatics, and even the cellular tissue in the tubes of the kidney, was discovered to be hæmatopoietic. Rindfleisch concludes by admitting that M. Hayem, in 1877, already pointed out the identical nature of certain cells in the blood and in the red marrow. In the small red-corpuscles found in the blood of convalescents, we recognize the French physiologists' "*globules nains*" described in the eighty-fourth volume of the *Comptes Rendus*.—*British Med. Journal*, May 22, 1880.

MATERIA MEDICA AND THERAPEUTICS.

On the Mydriatic Properties of Homatropin.

The discovery of a new mydriatic is a matter of practical interest to the ophthalmic surgeon. To atropia there are many objections; in some instances it is so irritating that it cannot be endured; and in all cases, when applied for the purpose of temporarily suspending the power of accommodation in order to make manifest the real state of the refraction of the eye, its effects continue an inconveniently long time. But much more serious than either of these is the proneness of atropia to precipitate an attack of acute glaucoma in certain conditions of the eye which otherwise call for the use of a mydriatic. Mr. JOHN

TWEEDY and Dr. SYDNEY RINGER (*Lancet*, May 22, 1880) bring to the notice of the profession homatropin, which promises to be of very great value and utility in ophthalmic practice. It is a bland and efficient mydriatic, rapid in its action, and of comparatively short duration.

Homatropin appears to possess many of the properties of atropia, but in a weaker degree. It must, however, be distinctly understood that, though relatively weaker than atropia, its action on the iris and ciliary muscle is really very powerful while it lasts. It is not merely weak atropia in the sense that it only does what a weak solution of atropia would do. A solution of the homatropin of the strength above mentioned widely and fixedly dilates the pupil in from fifteen to twenty minutes, and affects the accommodation in an equally rapid manner. The chief peculiarity, and in some respects the great advantage, of homatropin, is that its effects soon pass off, and certainly do not last anything like so long as those of atropia. Within four and twenty hours after an application the accommodation, after complete apparent suspension, recovers its pristine vigour, the pupil is less dilated, and reacts to light, though it has not quite regained its original size. As regards its action on the ciliary muscle, though decidedly more prompt, it is not quite so intense as that of atropia. Homatropin is, moreover, singularly unirritating. I have applied it to about fifty cases, and in not one was there the smallest sign of irritation or discomfort.

The homatropin used was obtained from Mr. Martindale, No. 10 New Cavendish Street, London.

Hypodermic Injection of Pilocarpine.

Dr. CIARAMELLI (*Giornale Internat. delle Scienze Mediche*, Anno 1, Fasc. x. xi.) contributes a carefully written paper on the therapeutic and physiological action of jaborandi and its alkaloid, as observed in his own practice. He has frequently administered the drug in cases of recent and large pleuritic effusions, but could never altogether satisfy himself that any benefit had been derived from this treatment. On the other hand, he witnessed very satisfactory results from the use of jaborandi in acute rheumatism, and in anasarca depending on acute or subacute nephritis, of which latter he gives two interesting cases. He recommends the following method of prescribing the drug, viz., jaborandi leaves three grammes (46 grains); infuse into 150 grammes of warm water; add two grammes of acetate of ammonia; and 25 of syrup; mix; the dose is one tablespoonful daily. As regards pilocarpine, its physiological action may be considered under two divisions, namely, the constant and inconstant; among the former he enumerates flushing of the face, a sense of heat, salivation, perspiration, rise of temperature, increased frequency of pulse and respiration; among the latter, an increase in the quantity of urine voided (in which he differs from most observers), and an increase in the nasal and lachrymal secretions. He saw vomiting occur only in one instance, and never saw any augmentation of the bronchial or intestinal secretions. He considers the phenomena induced by pilocarpine to depend partly on acceleration of the circulation, with increased tension, especially in the peripheral capillaries, and partly on a specific action exerted on the nervous centres.—*Lond. Med. Record*, May 15, 1880.

The Stigmata of Maize.

It is hardly a year since this remedy was first introduced into the ordinary routine of practice, and yet it may not be uninteresting to make an abstract of some of the papers which have been published in regard to it. Prof. CASTAN, at the Montpellier meeting, called attention to the stigmata of maize as a remedy